EXPOSURE INVESTIGATION

WHAT IS THE PUBLIC HEALTH ISSUE?

- According to the Pew Commission on Environmental Health, 90% of the registered voters in the United States believe that the environment plays a significant role in their health.
- More than 1,600 hazardous waste sites are included on the National Priorities List (NPL) and are targeted for clean up by the Environmental Protection Agency. About 15 million people live within 1 mile of NPL sites.
- Environmental public health is responsible for identifying and reducing adverse health effects that may be associated with exposure to hazardous substances in the environment.

WHAT HAS ATSDR ACCOMPLISHED?

The Agency for Toxic Substances and Disease Registry (ATSDR) conducts exposure investigations (EIs) to gather and analyze site-specific information to determine whether human populations have been exposed to hazardous substances. An EI is often conducted as part of a site public health assessment. EIs include

- Biomedical testing (e.g., urine, blood samples), which often indicates exposure to a contaminant.
- Environmental testing (to detect contamination of soil, water, or air) at locations near where people live, spend leisure time, or might come into contact with contaminants under investigation.
- Exposure-dose reconstruction analyses, which are used to estimate the contaminant levels that people may have been exposed to in the past or may be exposed to in the future.

ATSDR staff and partners conducted 19 EIs in 2002. Environmental risk managers and public health professionals use the information to assess the effectiveness of previous remedial efforts and intervention strategies in minimizing or eliminating human exposures.

Example of Program in Action

ATSDR, in conjunction with its cooperative agreement partner, the South Carolina Department of Health and Environmental Control, conducted an EI to assess human exposure to uranium from well-water in two South Carolina communities where drinking water had high levels of uranium. Urine samples for 105 residents were tested for uranium 1 to 3 months after the residents had stopped drinking well-water. The concentration of uranium in urine samples from 94 (90%) of the residents exceeded the 90th percentile of the national comparison population. ATSDR and state health department physicians were available for consultation with physicians about their patients' test results and follow-up medical management. Residents were supplied with an alternative water source while municipal water lines were under construction.

WHAT ARE THE NEXT STEPS?

ATSDR continues to conduct EIs for a particular site when people have been exposed to hazardous contaminants, additional information related to the exposure is needed, and/or the results from the EI could affect public health decisions. In addition, ATSDR is investigating ways to improve the EI, including using data from unexposed populations to provide comparison information and adopting innovative environmental sampling techniques.